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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/615,055

07/07/2003

Norman L. Owens

129881

8042

7590

03/25/2005

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EXAMINER

VU, HUNG K

ART UNIT

PAPER NUMBER

2811

DATE MAILED: 03/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

11A

<b>Office Action Summary</b>	<b>Application No.</b> 10/615,055	<b>Applicant(s)</b> OWENS ET AL.	
	<b>Examiner</b> Hung Vu	<b>Art Unit</b> 2811	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 20 December 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) 1-26 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 27-31 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 07/07/03.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election with traverse of Invention of Group II, Embodiment 1 of Figure 3, Claims 27-31, in the reply filed on 08/23/04 and 12/20/04 is acknowledged. The traversal is on the ground(s) that the claims are sufficiently definite so that there should be no question as to what is being claimed and that there is no reason to attempt to read limitations into the claims that are not set out therein. This is not found persuasive because it is well settled that related inventions are restrictable if it is shown that these inventions distinct. It was clearly established that Group I and II inventions and Embodiments are in fact distinct.

The requirement is still deemed proper and is therefore made FINAL.

2. Claims 1-26 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected Invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 08/23/04 and 12/20/04.

### ***Specification***

3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

*Claim Objections*

4. Claim 28 is objected to because of the following informalities: In claim 28, line 2, “a leadframe” should be changed to “the leadframe” for clarity. Appropriate correction is required.

*Claim Rejections - 35 USC § 102*

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 27 and 30 – 31 are rejected under 35 U.S.C. 102(b) as being anticipated by Morifuji (PN 6,175,157).

Morifuji discloses, as shown in Figures 1-11, a method of manufacturing a semiconductor component, the method comprising:

providing a leadframe (12) having a surface, the surface defining a horizontal direction and a line perpendicular to the surface defining a vertical direction;

attaching a semiconductor chip (14) to the leadframe;

attaching an integrated passive component (16) to the semiconductor chip such that:

the semiconductor chip is located between the integrated passive component and the leadframe;

the semiconductor chip, the integrated passive component, and the leadframe have a vertical relationship with respect to each other;

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disposing a mold compound (22) around the semiconductor chip, the integrated passive component, and the leadframe such that a portion of the leadframe is exposed outside of the mold compound,

wherein:

the integrated passive component comprises a passive device [Col. 2, lines 50-65].

Regarding claim 30, Morifuji discloses the method further comprising:

electrically coupling the integrated passive component to at least one of the semiconductor chip and the leadframe.

Regarding claim 31, Morifuji discloses the method further comprising:

providing an adhesive layer (18) between the integrated passive component and the semiconductor chip;

securing the integrated passive component to the semiconductor chip using the adhesive layer.

### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 28 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morifuji (PN 6,175,157) in view of Lo et al. (PN 6,507,120).

Regarding claim 28, Morifuji discloses the claimed invention including the method of manufacturing the semiconductor component as explained in the rejection above. Morifuji further discloses the method of providing the leadframe. Morifuji does not disclose the leadframe comprises a quad flat non-leaded leadframe. However, Lo et al. discloses a method of providing a leadframe (202) comprises a quad flat non-leaded leadframe. Note Figures 2-12 of Lo et al.. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to form the leadframe of Morifuji comprising a quad flat non-leaded leadframe, such as taught by Lo et al. in order to reduce the area and the thickness of the package and to increase the density of the package.

Regarding claim 29, Morifuji discloses the claimed invention including the method of manufacturing the semiconductor component as explained in the rejection above. Morifuji further discloses the method of attaching the semiconductor chip to the leadframe comprises electrically coupling the semiconductor chip to the leadframe. Morifuji does not disclose the method of attaching the semiconductor chip to the leadframe using flip chip interconnects. However, Lo et al. discloses a method of method of attaching the semiconductor chip (210) to the leadframe (202) using flip chip interconnects (218). Note Figures 2-12 of Lo et al.. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to attach the semiconductor chip to the leadframe of Morifuji using flip chip

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interconnects, such as taught by Lo et al. in order to reduce the area and the thickness of the package and to increase the density of the package.

*Conclusion*

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hung K. Vu whose telephone number is (571) 272-1666. The examiner can normally be reached on Mon-Thurs 6:00-3:30, alternate Friday 7:00-3:30, Eastern Time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie C. Lee can be reached on (571) 272-1732. The Central Fax Number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Vu

March 17, 2005



Hung Vu

Primary Examiner